

this rejection. The Malcolm et al. reference is directed to a digital television system which permits video and computer graphics to be displayed. Malcolm et al. are primarily concerned with a technique for insuring synchronization of the chrominance information. As shown in figure 1B-2, at item 30, Malcolm et al. disclose only cathode ray tube displays. As such, they are not concerned at all with problems that might be encountered in flat panel technology. The problems associated with flat panel technology are, of course, one of the principle reasons applicant developed the invention. See the problems addressed at pages 1-3 of the specification of this application.

Malcolm et al. do mention "control [of] the brightness for variable fade-in and fade-out of the video or for pull-down to black, and [the Malcolm et al. disclosure] further incorporates computer selectable hue/saturation levels...." However, Malcolm et al. do not appear to consider in any respect adjustment of brightness which might be required when a standard video signal is applied to a flat panel display.

The Bryden reference also relates to a digital television system in which a three bit digital video signal is combined with a three bit representation of an average brightness signal (i.e. they are added) resulting in a four bit digital output to a decoder and nonlinear digital-to-analog converter for presentation on a cathode-ray tube display. The digital-to-analog converter is

designed to provide a transfer characteristic such as consecutive steps of illumination intensity at a constant ratio of luminance. Bryden has no recognition of problems associated with intensity when displaying information on a flat panel display.

Kageyama is directed to a contrast correction device for adjusting the transfer functions (Figures 5A-5E) of a gamma correction device in response to average luminance.

The Krivacic reference is directed to a user interface which permits controls to be operated by both hands. The Examiner seems to be using Krivacic for the statement at column 1, lines 23-26 where Krivacic states, "Such interfacing allows an operator to quickly position the cursor on a video display terminal ("VDT"), such as a cathode ray tube ("CRT"), liquid crystal display ("LCD"), or active or passive matrix displays." A similar quote exists at column 2, lines 42-47.

The Examiner notes correctly:

"However, Malcolm et al. do not disclose in his [sic] video/graphic system (which controls the brightness) a brightness value being added to the value of the pixels of the image data and clamping values of any brightness adjusted pixels that fall below the lowest output pixel value to the lowest output pixel value and values of any of the brightness adjusted pixels that are above a highest output pixel value to the highest pixel value. Finally, Malcolm et al. do not disclose that the output from the video/graphic system is displayed in an LCD."

It is clear that there is no need in Malcolm et al. for adding the brightness value and clamping any values which exceed a maximum

value or fall below a minimum value. There is no need because Malcolm et al. utilize a cathode ray tube and not a flat panel display. The problems overcome by the invention have to do with the use of flat panel technology.

The Examiner states that it would have been:

"Obvious to a person of ordinary skill in the art at the time that the invention was made to add a digital brightness code to the digital video, as taught by Bryden, in the apparatus of Malcolm et al. because adding a brightness code to the digital video information is useful in optimizing the luminance of the display."

Applicant respectfully traverses the Examiner's position. Both Bryden and Malcolm et al. are cathode ray tube systems. The brightness of a cathode ray tube display is typically controlled by adjusting cathode ray tube control voltages. To get extra brightness in Malcolm et al. does not require the techniques of Bryden but only turning up the brightness control on the CRT. The Examiner has not provided a reason why one would utilize Bryden's approach as opposed to adjusting a brightness control on the cathode ray tube.

The Examiner's reason for combining the Kageyama reference with the other two is even more remote. The Examiner states it would have been:

"Obvious to a person of ordinary skill in the art at the time that the invention was made to use a correction circuit, as taught by Kageyama, in the combined apparatus of Malcolm et al. and Bryden because the correction circuit is useful in restricting, or clamping the brightness values to a predetermined brightness and the

darkness values to a predetermined darkness, enhancing so the contrast of the output image."

Applicant respectfully traverses the Examiner's position. First, Kageyama does not clamp brightness values at all. What Kageyama does do, as illustrated in figures 5A-5E is adjust the transfer function of the gamma correction circuit to different shapes. There is no portion of any shape of any of those transfer functions which implies a clamping. Further Kageyama, like the other two references, is a cathode ray tube system.

Since Kageyama does not do what the Examiner says it does, its incorporation with the other references would not achieve that which the claims require.

At the bottom of page four of the office action, the Examiner states that it would have been:

"Obvious to a person of ordinary skill in the art at the time that the invention was made to use the LCD, as taught by Krivacic, in the combined apparatus of Malcolm et al., Bryden, and Kageyama because the LCD weighs less and easier to handle than a CRT, for example."

Applicant respectfully traverses the Examiner's position. What one would get, if one combined an LCD display of the type mentioned by Krivacic for the cathode ray tube display of the other references, is a display that would have poor brightness characteristics. The claimed invention is directed at overcoming the problems of poor brightness when using video signals with a flat panel display.

In short, even if the references were combined in an attempt to meet the claims in a way that the Examiner's proposes, the combined references would not have the advantages of the claimed invention and, in fact, would be subject to the problems of the prior art identified in this application.

The Examiner has indicated that claims 10, 11, 13, 14, 16, 18 and 20-23 distinguish over the prior art. Claims 10, 13, 16, 20 and 22 have been made independent and should therefore be in condition for allowance. Similarly, the claims dependent upon these claims should be allowable. The Examiner previously indicated that claims 1-8 and 24-26 were allowed. Therefore only claims 9, 12, 15, 17 and 19 should be subject to a rejection.

Claim 9 is directed to "flat panel" technology and none of the references disclose "a formatter...a brightness adjuster...and a color space converter that converts the format of the brightness adjusted pixels to a format renderable by said flat panel display." This is essentially the motion video architecture data path illustrated as item 30 of figure 2. None of the references are directed to a motion video architecture data path. Therefore, claim 9 is considered to distinguish over the prior art.

Claim 12 is also directed to flat panel technology. It requires a video controller...a computer graphics controller...a sequencer...and a motion video architecture data path that receives the image data from the video memory and incorporates motion video

into the graphic presentation produced by the video controller for display on said flat panel display, the motion video architecture data path including a brightness adjuster...." thus, claim 12 is considered to distinguish over the references as well.

Similarly, claim 15 requires "a flat panel display...a video memory...a computer...and a graphics controller that retrieves the image data stored in the video memory and supplies the image data to the flat panel display, the graphics controller including the brightness adjuster...." claim 17, dependent upon claim 15 also distinguishes over the prior art for the same reasons.

Claim 19 requires "adding a brightness value to values of pixels...[and] clamping values of any of the brightness adjusted pixels....

None of the references applied by the Examiner show clamping at all. As discussed above, contrary to the Examiner's indication, the Kageyama reference does not disclose clamping. It only modifies the shape of the transfer function of a gamma correction circuit. Accordingly, the Examiner has not made a *prima facia* showing of obviousness based on the references applied.

For the reasons given, Applicants believe that the application is in condition for allowance and Applicants request that the Examiner give the application favorable consideration and permit it to issue as a patent.

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To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.236 is hereby made. Please charge any shortage in fees, to Deposit Account 12-2237 and please credit any excess fees to such deposit account.

Respectfully submitted,

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